

541,171

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau(43) International Publication Date
30 September 2004 (30.09.2004)

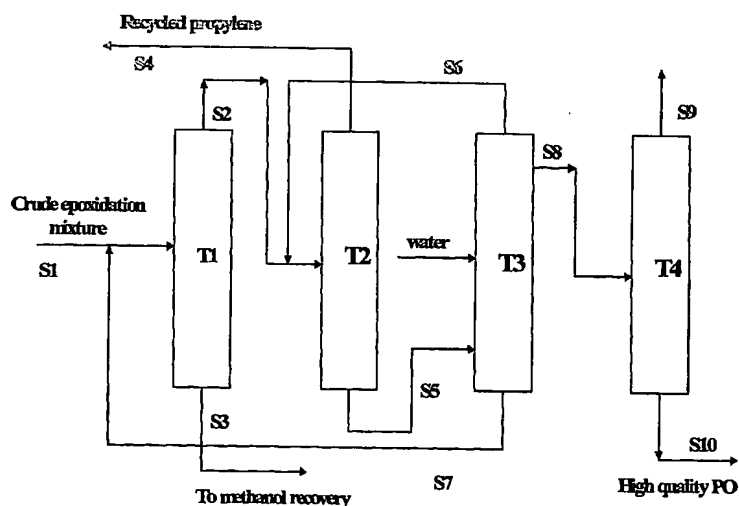
PCT

(10) International Publication Number
WO 2004/083196 A1

- (51) International Patent Classification⁷: **C07D 301/32**
- (21) International Application Number:
PCT/US2004/006529
- (22) International Filing Date: 4 March 2004 (04.03.2004)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
60/455,506 18 March 2003 (18.03.2003) US
- (71) Applicant (for all designated States except US): **DOW GLOBAL TECHNOLOGIES INC.** [US/US]; Washington Street, 1790 Building, Midland, MI 48674 (US).
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): **PATRASCU, Renate** [DE/DE]; Distelweg 11 B, Stade 21682 (DE). **ASTORI, Sabrina** [IT/IT]; Via Dauli 90, 30031 Dolo, Venezia (IT). **WEIDENBACH, Meinolf, M.** [DE/DE]; Schwagerstrasse 5A, 21706 Drochtersen (DE).
- (74) Agent: **ZUCKERMAN, Marie, F.**; The Dow Chemical Company, Intellectual Property, P.O. Box 1967, Midland, MI 48641-1967 (US).
- (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

[Continued on next page]

(54) Title: PURIFICATION OF PROPYLENE OXIDE RESULTING FROM EPOXIDATION OF PROPYLENE WITH HYDROGEN PEROXIDE



(57) Abstract: A process of separating a purified propylene oxide from a crude epoxidation product produced, preferably, in an epoxidation reaction of propylene with hydrogen peroxide. The process involves removing bulk water, bulk methanol, and unreacted propylene from the crude epoxidation product and thereafter subjecting the resulting propylene oxide product to extractive distillation with water as an extraction solvent. Under distillation conditions, including a bottoms temperature of greater than about 55°C and less than about 75°C, an overhead or side-cut distillate stream containing a purified propylene oxide is obtained with low yield loss of propylene oxide to propylene glycols and other glycol heavies. The purified propylene oxide can be further purified in a finishing distillation to obtain propylene oxide meeting commercial grade purity requirements.

WO 2004/083196 A1



Published:

— with international search report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.